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Takuya Matsumoto

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EXAMINER

GORMAN, DARREN W

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,136	Applicant(s) MATSUMOTO ET AL.	
	Examiner Darren W. Gorman	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2006 (preliminary amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/29/05 & 08/08/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The IDS forms filed on April 29, 2005 and August 8, 2005 are hereby acknowledged and have been placed of record. Please find attached a signed copy of each PTO 1449.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character not mentioned in the description: Reference number “57”, shown in Figure 3, is not found in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are further objected to because in Figure 2 there is a misspelling. The text label for the element denoted by reference number "63" should be changed from "High registance resistor" to "High resistance resistor".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1-10 and 12-14 are objected to because of the following informalities:

Regarding each of independent claims 1, 5, 8 and 10, the portion of the preamble, "...while being separated, with an electric insulation being kept, from a passage through which a paint is supplied to the atomizer" is generally unclear. At least this portion of the preamble of claims 1, 5, 8 and 10 should be revised for clarity.

Regarding each of claims 6 and 7, the recitation, "wherein the external electrode has the charging electrode exposed at the forward end thereof" is redundant. Claim 1, from which claims 6 and 7 depend, already recites, "the external electrode...having a charging electrode provided being exposed at the forward end thereof".

Regarding each of claims 13 and 14, the recitation, "wherein the external electrode has the charging electrode exposed at the forward end thereof" is redundant. Claim 5, from which claims 13 and 14 depend, already recites, "the external electrode...having a charging electrode provided being exposed at the forward end thereof".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claim 1, on line 5, “the apparatus” lacks antecedent basis.

Further, regarding claim 1, on lines 5-6, “the back of the atomizer” lacks antecedent basis. Also note that claim 2 recites, “the back of the atomizer”.

Regarding claim 4, on lines 4-5, “the exposed end of the outer surface of the electrode receptacle” lacks antecedent basis.

Regarding claim 5, on line 5, “the apparatus” lacks antecedent basis.

Further, regarding claim 5, on line 5, “outside” the apparatus is indefinite because it cannot be determined what “the apparatus” is.

Further, regarding claim 5, on line 12, “the outer surface of the plug-in portion” lacks antecedent basis.

Regarding claim 7, on line 4, “the apparatus body” lacks antecedent basis.

Regarding claim 8, on line 7, it is generally unclear as to how the recitation of “a forward end electrode” relates to the preamble recitation of “a charging electrode”.

Regarding claim 9, on lines 1-2, “the forward-end electrode of the external electrode” lacks antecedent basis. There is no antecedent basis provided for the recited “forward-end electrode” to be a sub-combination element of the “external electrode”. Applicant’s attention is directed to the above discussion regarding the lack of recitations in claim 8 relating the “forward-end electrode” to the preamble-recited “charging electrode”.

Further, regarding claim 9, on line 2, “the center axis of spraying” lacks antecedent basis.

Further, regarding claim 9, on lines 2-3, the recitation, “and within a range not exceeding a half of a forward-going direction from the atomization starting position” is generally unclear. Applicant’s assistance in explaining the metes and bounds of this recitation is requested.

Regarding claim 10, on line 4, it is generally unclear as to how the recitation of “a forward end electrode” relates to the preamble recitation of “a charging electrode”.

Further, regarding claim 10, on lines 4-7, the entire recitation of how the “forward-end electrode is disposed in such a manner that any streamer discharge will be prevented from occurring toward a paint spray nozzle of the atomizer and the electrode will gradually be opened from the center axis of spraying as it goes away from the end of spray not to be applied with the end of paint spray flow” is unclear. The Examiner cannot determine what this recitation means and requests Applicant’s assistance in explaining the metes and bounds of this claim.

Regarding claim 11, on lines 1-2, the recitation, “a high resistance resistor... provided between a forward-end electrode and high voltage output” is unclear. What “forward-end electrode” and what “high-voltage output” is this recitation referring to?

Further, regarding claim 11, on lines 2-7, the entire recitation of how “the forward-end electrode is disposed in such a manner that...any streamer discharge will be prevented from occurring toward a paint spray nozzle of the atomizer and the electrode will gradually be opened from the center axis of spraying as it goes away from the end of spray not to be applied with the end of paint spray flow” is unclear. The Examiner cannot determine what this recitation means and requests Applicant’s assistance in explaining the metes and bounds of this claim.

Regarding claim 12, on line 2, the recitation “an external electrode” is unclear, because it cannot be determined how this “external electrode” recitation relates to the “charging electrode” and “forward-end electrode” recitations of claim 10.

Further, regarding claim 12, on line 2, “a high voltage output terminal” is unclear. What “high voltage output terminal” is this recitation referring to?

Further, regarding claim 12, on lines 3-4, the recitation, “the angle at which an electrode receptacle provided at the side of the apparatus is larger in the forward direction” is unclear. The recitation, “the angle” lacks antecedent basis. What “angle” is this recitation referring to? What “electrode receptacle” is this recitation referring to? What “side of the apparatus” is this recitation referring to? What “forward direction” is this recitation referring to?

Regarding claim 14, on line 4, “the apparatus body” lacks antecedent basis.

Regarding claim 15, on line 2, the recitation “an external electrode” is unclear, because it cannot be determined how this “external electrode” recitation relates to the “forward-end electrode” recitation of claim 11.

Further, regarding claim 15, on line 2, “a high voltage output terminal” is unclear. What “high voltage output terminal” is this recitation referring to?

Further, regarding claim 15, on lines 3-4, the recitation, “the angle at which an electrode receptacle provided at the side of the apparatus is larger in the forward direction” is unclear. The recitation, “the angle” lacks antecedent basis. What “angle” is this recitation referring to? What “electrode receptacle” is this recitation referring to? What “side of the apparatus” is this recitation referring to? What “forward direction” is this recitation referring to?

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 5, 8-10 and 12-14 are rejected, as well as the claims are understood by the Examiner, under 35 U.S.C. 102(b) as being anticipated by Luderer et al., USPN 3,937,401.

Luderer shows and discloses several embodiments (see Figures 1-6) of an electrostatic paint spray gun having a pistol-shaped body (see column 3, line 13) with a barrel portion (10) including an atomizer nozzle (11) at a forward end thereof and an external charging electrode (15) disposed within an electrode body (34, 34a, 34b, 34c) made from an insulative material (see column 4, lines 47-48), wherein the charging electrode includes an exposed portion (12) which is projected ahead of the atomizer nozzle. It should first be noted, Luderer expressly discloses that the “individual characteristics of the various embodiments and variations can be combined with one another” (see column 5, lines 66-68). Luderer further shows at least one of the embodiments as having the electrode body (34, 34a, 34b, 34c) removably plugged into an electrode receptacle/plug-in portion (30) (see Figures 2 and 4-6; and see column 4, lines 46-48) having an electrical connector (36). Luderer also expressly discloses a corrugated boundary surface to provide a long creepage distance (see column 5, lines 19-23). Further, Luderer shows a high voltage output terminal (high-voltage output end of 37 – see Figure 2) located short of a position where the paint atomization is started by the atomizer and across a high-resistance resistor (13a), and Luderer also expressly discloses that the distance of the external electrode relative to the position at which atomization of paint starts is selected in accordance with the conductivity of the coating material being sprayed (see column 6, lines 10-22). Since, Luderer further teaches a feature which allows the user to adjust and readjust the distance of the electrode with respect to the atomizer (see column 5, lines 28-33), then it is clear that the device of Luderer is capable of locating the exposed forward-end electrode 30-80mm. ahead of the atomization starting position.

Further, the adjustable feature discussed above is provided by the electrode body being made from a bendable, resilient material (see again column 5, lines 28-33). Also, the electrode body shown in the embodiments of Figures 2, 5 and 6 clearly include portions which are narrower in thickness when compared to the portion connected at the electrode receptacle. Thus, it is reasonable to say that the portion(s) which are narrower in thickness are lower in strength than the electrode receptacle portion. Further, regarding the recitations in claim 10 of “wherein a forward-end electrode is disposed in such a manner that any streamer discharge will be prevented from occurring...”, such recitations are merely functional and do not structurally distinguish the claim from the prior art apparatus of Luderer. Thus, since the device of Luderer anticipates all of the structural limitations set forth in claim 10, then the device of Luderer is capable of the aforementioned functional recitations.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 6, 7, 11 and 15 are rejected, as well as the claims are understood by the Examiner, under 35 U.S.C. 103(a) as being unpatentable over Luderer et al.

Luderer shows and discloses several embodiments (see Figures 1-6) of an electrostatic paint spray gun having a pistol-shaped body (see column 3, line 13) with a barrel portion (10) including an atomizer nozzle (11) at a forward end thereof and an external charging electrode

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(15) disposed within an electrode body (34, 34a, 34b, 34c) made from an insulative material (see column 4, lines 47-48), wherein the charging electrode includes an exposed portion (12) which is projected ahead of the atomizer nozzle. Again, as noted above, Luderer expressly discloses that the “individual characteristics of the various embodiments and variations can be combined with one another” (see column 5, lines 66-68). Luderer further shows at least one of the embodiments as having the electrode body (34, 34a, 34b, 34c) removably plugged into an electrode receptacle/plug-in portion (30) (see Figures 2 and 4-6; and see column 4, lines 46-48) having an electrical connector (36). Luderer further shows a first high-resistance resistor (13a) between a high-voltage output (13) and the electrode receptacle and a second high-resistance resistor (41 – see Figure 5), which is disclosed as optionally being provided within the electrode body (see column 5, lines 40-42), thus being provided at the forward-end electrode. Further, Luderer discloses that the electrode body may be made from a bendable, resilient material (see column 5, lines 28-33). Also, the electrode body shown in the embodiments of Figures 2, 5 and 6 clearly include portions which are narrower in thickness when compared to the portion connected at the electrode receptacle. Thus, it is reasonable to say that the portion(s) which are narrower in thickness are lower in strength than the electrode receptacle portion.

However, the disclosure of Luderer concentrates on the features at the spraying/charging end of the apparatus, thus the disclosure is silent as to the gun including “an electroconductive grip”. Further, Luderer is silent as to the resistance of the high-resistance resistor (13a), thus Luderer does not expressly disclose the resistance of the resistor as being “more than 150 Mega ohms”.

With respect to the “electroconductive grip” recitation, it is old and well-known in the art to form the grip portion of a pistol-shaped electrostatic spray gun from a material which would result in the grip being an “electroconductive grip”, thus providing a grip having ground potential when held by the user. Indeed, by Applicant’s own admission (see specification, page 12, lines 17-18), such an electroconductive grip is “conventional”. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the non-descript grip portion of the gun disclosed by Luderer, from a material which would result in the grip being an electroconductive grip, as is well known in the art, thus providing a grip having ground potential when held by the user, and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious choice. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

With respect to the resistor as being “more than 150 Mega ohms”, the optimal resistance of the current limiting resistor of an electrostatic paint spray gun would be determined by those having ordinary skill in the art through routine experimentation. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a resistor having a resistance of more than 150 Mega ohms, for the current-limiting resistor in the electrostatic paint spray gun of Luderer, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955).

Regarding the recitations in claim 11 of “wherein the forward-end electrode is disposed in such a manner that in case the discharge current from the forward-end electrode be maintained at 60 to 150 uA with a charging voltage of -70 kV being applied, any streamer discharge will be

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prevented from occurring...”, such recitations are merely functional and do not structurally distinguish the claim from the prior art apparatus of Luderer. Thus, since the device of Luderer anticipates or renders obvious all of the structural limitations set forth in claim 11, then the device of Luderer is capable of the aforementioned functional recitations.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents to Raetz et al., Hastings, Benedek et al., Harjar, Rood et al., and Traylor, are cited as of interest.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W. Gorman whose telephone number is 571-272-4901. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Darren W Gorman/
Primary Examiner, Art Unit 3752

/D. W. G./
Primary Examiner, Art Unit 3752